

We claim:

1 1. A distributed computing system comprising:
2 a capable network environment;
3 a plurality of remote computing devices in communication with the capable network
4 environment; and
5 a plurality of surrogates operating within the capable network environment;
6 wherein each of the remote computing devices is associated with one of the surrogates
7 and the surrogates are logically organized into groups allowing the remote devices related to the
8 grouped surrogates to participate in an activity together.

1 2. The distributed computing system of claim 1 wherein at least one of the
2 surrogates is comprised of:
3 a software module for communicating with the remote computing device with
4 which it is associated;
5 a software module for communication with the other surrogates;
6 a software module for calculating changes of state with respect to the activity;
7 a software module for calculating the state of the activity;
8 a software module for storing its state with respect to the activity;
9 a software module for capturing usage, activity and outcome; and
10 a software module for buffering data and later transmitting communication to its
11 computing device;
12 wherein each of the surrogates represents its associated remote computing device within
13 the distributed computing application.

1 3. The distributed computing system of claim 2 wherein the at least one of the
2 surrogates is further comprised of a group proxy.

1 4. The distributed computing system of claim 1 further comprising a group service
2 operating within the network environment.

1 5. The distributed computing system of claim 1 wherein the activity is a multi-player
2 game and each remote computing device is a game input/output device for a game player.

1 6. The distributed computing system of claim 1 wherein the activity is an emergency
2 first responder support system.

1 7. The distributed computing system of claim 1 wherein the remote computing
2 devices are cellular telephones, personal digital assistants, communicators, dedicated game
3 devices, personal computers, laptop computers or work stations.

1 8. The distributed computing system of claim 1 wherein the remote computing
2 devices are connected to the capable network environment via a wireless network, telephone
3 network, wide area network, local area network or the Internet.

1 9. The distributed computing system of claim 1 wherein the capable network
2 environment is comprised of a plurality of computers interconnected via a high speed network.

1 10. The distributed computing system of claim 9 wherein the computers are personal
2 computers, work stations or network servers.

1 11. A method of operating a multi-user activity comprising the steps of:
2 a first remote device contacting a capable network environment and requesting to
3 participate in the activity;
4 the network environment instantiating a first surrogate assigned to the first remote
5 device;
6 a second remote device contacting the capable network environment and
7 requesting to participate in the activity;
8 the network environment instantiating a second surrogate assigned to the second
9 remote device;
10 arranging the first surrogate and the second surrogate into a group; and
11 the first remote device and the second remote device participating in the activity
12 together.

1 12. The method of claim 11 further comprising the step of the first surrogate and the
2 second surrogate registering with a group service.

1 13. The method of claim 12 further comprising the step of the group service
2 providing the first surrogate with a first group proxy and the second surrogate with a second
3 group proxy.

1 14. The method of claim 11 wherein the group is a coordinator cohort group or a peer
2 group.

1 15. The method of claim 11 wherein the activity is a multi-player game and each
2 remote computing device is a game input/output device for a game player.

1 16. The method of claim 11 wherein the activity is an emergency first responder
2 support system.

1 17. The method of claim 11 wherein the remote computing devices are cellular
2 telephones, personal digital assistants, communicators, dedicated game devices, personal
3 computers, laptop computer or work stations.

1 18. The method of claim 11 wherein the remote computing devices are connected to
2 the capable network environment via a wireless network, telephone network, wide area network,
3 local area network or the Internet.

1 19. The method of claim 11 wherein the capable network environment is comprised
2 of a plurality of computers interconnected via a high speed network.

1 20. The method of claim 19 wherein the computers are personal computers, work
2 stations or network servers.

1 21. A computer readable medium containing instruction for controlling a computer
2 system to perform a method of operating a multi-user activity comprising the steps of:
3 a first remote device contacting a capable network environment and requesting to
4 participate in the activity;
5 the network environment instantiating a first surrogate assigned to the first remote
6 device;
7 a second remote device contacting the capable network environment and
8 requesting to participate in the activity;
9 the network environment instantiating a second surrogate assigned to the second
10 remote device;
11 arranging the first surrogate and the second surrogate into a group; and
12 the first remote device and the second remote device participating in the activity
13 together.

1 22. The computer readable medium of claim 21 wherein the method is further
2 comprised of the step of the first surrogate and the second surrogate registering with a group
3 service.

1 23. The computer readable medium of claim 21 wherein the method is further
2 comprised of the step of the group service providing the first surrogate with a first group proxy
3 and the second surrogate with a second group proxy.

1 24. The computer readable medium of claim 21 wherein the group is a coordinator
2 cohort group or a peer group.

1 25. The computer readable medium of claim 21 wherein the activity is a multi-player
2 game and each remote computing device is a game input/output device for a game player.

1 26. The computer readable medium of claim 21 wherein the activity is an emergency
2 first responder support system.

1 27. The computer readable medium of claim 21 wherein the remote computing
2 devices are cellular telephones, personal digital assistants, communicators, dedicated game
3 devices, personal computers, laptop computer or work stations.

1 28. The computer readable medium of claim 21 wherein the remote computing
2 devices are connected to the capable network environment via a wireless network, telephone
3 network, wide area network, local area network or the Internet.

1 29. The computer readable medium of claim 21 wherein the capable network
2 environment is comprised of a plurality of computers interconnected via a high speed network.

1 30. The computer readable medium of claim 29 wherein the computers are personal
2 computers, work stations or network servers.

1 31. A multiplayer gaming system for wireless telephone networks comprising:
2 a wireless telephone network;
3 a capable network environment connected to the telephone network;
4 a plurality of mobile devices wirelessly connected to the telephone network; and
5 a plurality of surrogates operating within the capable network environment;
6 wherein each of the remote computing devices is associated with one of the
7 surrogates and the surrogates are logically organized into groups allowing the remote devices
8 related to the grouped surrogate to participate in an activity together.

1 32. The gaming system of claim 31 further comprising a plurality of group proxies
2 associated with the surrogates.

1 33. The gaming system of claim 31 further comprising a group service operating
2 within the network environment.

1 34. The gaming system of claim 31 wherein the mobile devices are cellular
2 telephones, personal digital assistants, communicators, dedicated game devices, or laptop
3 computers.

1 35. The gaming system of claim 31 wherein the mobile devices are connected to the
2 capable network environment via a wireless network, telephone network, wide area network,
3 local area network or the Internet.

1 36. The gaming system of claim 31 wherein the capable network environment is
2 comprised of a plurality of computers interconnected via a high speed network.

1 37. The gaming system of claim 36 wherein the computers are personal computers,
2 work stations or network servers.

1 38. The gaming system of claim 31 wherein at least one of the surrogates in the group
2 calculates the state of the activity.

1 39. The gaming system of claim 31 wherein at least one of the mobile devices
2 includes a software MIDlet that performs a portion of the game functions.

1 40. A method of operating a multi-user game comprising the steps of:
2 a first mobile device contacting a capable network environment and requesting to
3 participate in the game;
4 the network environment instantiating a first surrogate assigned to the first mobile
5 device;
6 a second mobile device contacting the capable network environment and
7 requesting to participate in the activity;
8 the network environment instantiating a second surrogate assigned to the second
9 mobile device;
10 arranging the first surrogate and the second surrogate into a group; and
11 the first mobile device and the second mobile device participating in the game
12 together.

1 41. The method of claim 40 further comprising the step of the first surrogate and the
2 second surrogate registering with a group service.

1 42. The method of claim 41 further comprising the step of the group service
2 providing the first surrogate with a first group proxy and the second surrogate with a second
3 group proxy.

1 43. The method of claim 40 wherein the group is a coordinator cohort group or a peer
2 group.

1 44. The method of claim 40 wherein the mobile devices are cellular telephones,
2 personal digital assistants, communicators, dedicated game devices or laptop computers.

1 45. The method of claim 40 wherein the capable network environment is comprised
2 of a plurality of computers interconnected via a high speed network.

1 46. A computer readable medium containing instruction for controlling a computer
2 system to perform a method of operating a multi-user game comprising the steps of:
3 a first mobile device contacting a capable network environment and requesting to
4 participate in the game;
5 the network environment instantiating a first surrogate assigned to the first mobile
6 device;
7 a second mobile device contacting the capable network environment and
8 requesting to participate in the activity;
9 the network environment instantiating a second surrogate assigned to the second
10 mobile device;
11 arranging the first surrogate and the second surrogate into a group; and
12 the first mobile device and the second mobile device participating in the game
13 together.

1 47. The computer readable medium of claim 46 wherein the method is further
2 comprised of the step of the first surrogate and the second surrogate registering with a group
3 service.

1 48. The computer readable medium of claim 46 wherein the method is further
2 comprised of the step of the group service providing the first surrogate with a first group proxy
3 and the second surrogate with a second group proxy.

1 49. The computer readable medium of claim 46 wherein the group is a coordinator
2 cohort group or a peer group.

1 50. The computer readable medium of claim 46 wherein the mobile devices are
2 cellular telephones, personal digital assistants, communicators, dedicated game devices or laptop
3 computers.

1 51. The computer readable medium of claim 46 wherein the capable network
2 environment is comprised of a plurality of computers interconnected via a high speed network.

1 52. The computer readable medium of claim 51 wherein the computers are personal
2 computers, work stations or network servers.